

REMARKS

Applicant concurrently files herewith a Request for Continued Examination (RCE) and a Petition for Extension of Time for a three-month extension of time to extend the period for response to June 14, 2005.

Claims 1 and 3-19 are all of the claims presently pending in the application. Claims 1, 8, 13 and 15 have been amended to more particularly define the invention. Claims 16-19 have been added to claim additional features of the invention and to provide more varied protection for the claimed invention.

Entry of this Amendment is believed proper since no new issues are being presented to the Examiner which would require further consideration and/or search.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1 and 3-15 stand rejected under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement. Claim 8 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 1, 3-5 and 7-15 stand rejected under 35 U.S.C. § 102(b) as being unpatentable over Japanese Patent No. JP 2001191139 (hereinafter "JP '139"). Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '139 in view of Ohsaki et al. (U.S. Patent No. 4,969,957) (hereinafter "Ohsaki").

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention (e.g., as defined in claim 1) is directed to a method of manufacturing a rocker arm for opening and closing a valve. The method includes providing a metallic sheet, bending the metallic sheet to form a pair of predetermined side wall regions and a predetermined connecting wall region that connects the pair of sidewall regions, first pressing a portion of outer sides of each of the pair of predetermined sidewalls to plastically

flow so that the height of the side walls increases and secondly pressing the connecting wall region to form a recess in the connecting wall region. The first and second pressing functions are alternately repeated a plurality of times so that a metal flow continues between the pair of valve guide walls, including distal ends, of the pair of valve guide walls and the connecting wall.

In conventional rocker arm manufacturing methods the connecting wall of the valve engaging portion is deformed by press forming to form a rocker arm in which the body and the connecting wall are integrated. When press forming is conducted, however, a metal flow between the body and the connecting wall is cut off by a shock caused during the press forming. This lowers the mechanical strength of the continuous portion between the body and the connecting wall.

The claimed invention of exemplary claim 1, on the other hand, provides a method of manufacturing a rocker arm for opening and closing a valve, including first pressing a portion of outer sides of each of the pair of predetermined sidewalls to plastically flow so that the height of the side walls increases and secondly pressing the connecting wall region to form a recess in the connecting wall region. The first and second pressing functions are alternately repeated a plurality of times so that a metal flow continues between the pair of valve guide walls, including distal ends, of the pair of valve guide walls and the connecting wall (e.g., see Application at page 11, lines 16-18). Furthermore, the pressing forces for conducting the matching in the cross direction and for forming the groove are adjusted (e.g., see Application at page 13, lines 4-10). Accordingly, the rigidity of the valve engaging portion can be ensured and the quality of the rocker arm can be stabilized (e.g., see Application at page 3, lines 10-12).

II. THE 35 U.S.C. §112, FIRST PARAGRAPH REJECTION

Claims 1 and 3-15 stand rejected under 35 U.S.C. §112, first paragraph. Specifically, the Examiner states that the claims contain subject matter, “alternatively repeating the first pressing and the second pressing a plurality of times”, which is not described in the specification in such a way as to enable one skilled in the art to make and use the invention. Applicants respectfully

submit that claims 1 and 13 have been amended to recite “alternately repeating the first pressing and the second pressing a plurality of times” in accordance with the Examiner’s rejection.

The phrase “alternately repeating the first pressing and the second pressing a plurality of times” is clearly described in the Application. The Application discloses “[w]hen the machining in the cross direction and the machining for forming a groove are alternately repeated a plurality of times” at page 11, lines 16-18 of the Application. The Application clearly discloses alternately repeating the first pressing and the second pressing a plurality of times with enough specificity to enable one skilled in the related art to make and use the claimed invention.

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

III. THE 35 U.S.C. §112, SECOND PARAGRAPH REJECTION

Claim 8 stands rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Specifically, the Examiner states that the phrase “using a second die” in line 2 of claim 8 is unclear because there is no “first die” in claim 1.

Applicant has amended claim 8 to overcome the Examiner’s rejection. Specifically, Applicant has amended claim 8 so that it depends from claim 7, which recites a “first die”. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

IV. THE PRIOR ART REFERENCES

A. The JP ‘139 Reference

The Examiner alleges that JP ‘139 teaches the claimed invention of claims 1, 3-5 and 7-15. Applicant, however, respectfully submits that there are elements of the claimed invention that are neither taught nor suggested by JP ‘139.

That is, JP ‘139 does not teach or suggest “*alternately repeating the first pressing and the second pressing a plurality of times*” as recited in claim 1, and similarly recited in claim 13. Furthermore, JP ‘139 does not teach or suggest “*adjusting pressing forces*” as recited in claim 1 and similarly recited in dependent claim 15.

The novel features of the claimed invention are not taught or suggested by JP '139. Indeed, the Examiner attempts to rely on Figures 4 and 5 of JP '139 to support his allegations. However, the Examiner is clearly incorrect.

The Examiner alleges that JP '139 teaches a method of making a rocker arm including all of the steps claimed, but does not discuss any repeating of first and second pressing functions or adjusting the pressing forces until the correct shape is achieved.

That is, nowhere in the figures (nor anywhere else for that matter) does JP '139 teach or suggest that the first and second pressing functions are alternately repeated a plurality of times. Indeed, the structure and method disclosed in JP '139 are insufficient to make a metal flow continue between both the valve guide walls including distal ends thereof and the connecting wall. To make the metal flow continue between both the valve guide walls including distal ends, which is gradually increased in height according to the grooving process, and the connecting wall, it is important to alternately repeat the first and second pressing functions to adjust the pressing forces. Adjusting the pressing forces prevents shock during the press forming, which results in high mechanical strength for the resulting rocker arm.

In fact, the Examiner does not even allege that JP '139 teaches or suggests repeating the first and second pressing functions or adjusting the pressing forces. Indeed, JP '139 merely teaches that a valve stem abutting wall of an intermediate product is compressed and formed to shorten the width of the abutting wall by pressing and that a valve stem guide groove is formed on the bottom surface side of the valve stem abutting wall by driving a press punch (see JP '139 at Abstract). Nowhere does JP '139 even mention repeating of first and second pressing functions or adjusting the pressing forces, let alone teach or suggest that the first and second pressing functions are alternately repeated a plurality of times.

Moreover, JP '139 does not teach or suggest "*wherein a metal flow continues between the valve guide walls including distal ends thereof and the connecting wall*" as recited in claim 1 and similarly recited in dependent claim 14.

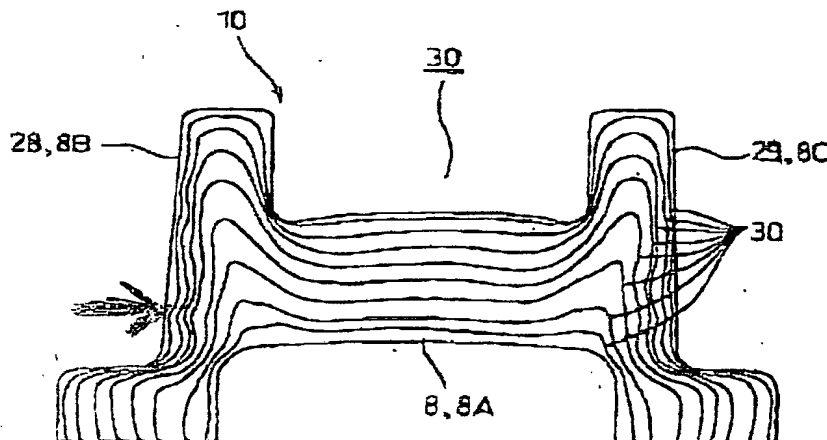
The Examiner alleges that JP '139 teaches this feature. However, the Examiner does not point to anywhere in the reference for support of this allegation. Neither the Abstract nor the figures of JP '139 even mention the metal flow, let alone teach or suggest that a metal flow

continues between the valve guide walls including distal ends thereof and the connecting wall.

Moreover, nowhere does JP '139 teach or suggest "*first pressing a portion of outer sides of the pair of predetermined side wall regions in a connecting direction in which the predetermined connecting wall region extends, respectively, to plastically flow so that a height of the pair of predetermined side wall regions is gradually increased*" as recited in exemplary claim 1 and similarly recited in claim 13.

Further, new dependent claims 16-19 are not taught or suggested by the cited prior art references. Indeed, as shown in Figure 5, first metallic dies 26, 27 press upper parts of the predetermined valve guide wall regions 8B, 8C, and lower parts are not pressed by the metallic dies 26, 27. That is, the pressure is applied to a vicinity of a variation point of metal flow from the predetermined connecting wall region 8A to the predetermined valve guide wall regions 8B, 8C.

To make metal flow continuous, it is necessary to apply the pressing force to a vicinity of the variation point (see the arrow in Figure 9 below) of metal point, which flows in the upper direction in the predetermined valve guide wall region 8B, 8C.



Therefore, Applicant submits that there are elements of the claimed invention that are not taught or suggested by JP '139. Therefore, the Examiner is respectfully requested to withdraw this rejection.

B. The Ohsaki Reference

The Examiner alleges that Ohsaki would have been combined with JP '139 to teach the claimed invention of claim 6. Applicants submit, however, that even if these references were combined, the alleged combination would not teach or suggest each and every feature of the claimed invention.

That is, neither Ohsaki nor JP '139, nor any combination thereof, teaches or suggests “*alternately repeating the first pressing and the second pressing a plurality of times*” as recited in claim 1. Furthermore, neither Ohsaki nor JP '139, nor any combination thereof, teaches or suggests “*adjusting pressing forces*” as recited in claim 1.

Indeed, the Examiner merely attempts to rely on Ohsaki as allegedly suggesting annealing a rocker arm. The Examiner relies on column 8, lines 34-37 of Ohsaki to support his allegations.

Nowhere, however, in this passage (nor anywhere else for that matter) does Ohsaki teach or suggest that the first and second pressing functions are alternately repeated a plurality of times. Indeed, the Examiner has not even alleged that Ohsaki teaches this recited feature. In fact, Ohsaki merely teaches a method of manufacturing a mechanical component with improved strength.

Therefore, Applicant submits that these references, even if combined, would not teach or suggest each and every element of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

V. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1 and 3-19, all of the claims presently pending in the application, are patentably distinct over the prior art of record and is in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

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Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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